## L4A-HPHMHM-3M-B



LDF4-50A SureFlex® Jumper with Integrated Birdproofing Shell interface types 4.3-10 Male and 4.3-10 Male, 3 m

WARNING: DO NOT MATE WITH 4.1-9.5 DIN

#### **Product Classification**

**Product Type** SureFlex® HP, HELIAX® performance

Product Brand HELIAX® | SureFlex®

Product Series LDF4-50A

### General Specifications

Body Style, Connector A Straight

Body Style, Connector B Straight

Interface, Connector A 4.3-10 Male

Interface, Connector B 4.3-10 Male

Specification Sheet Revision Level A

#### **Dimensions**

**Length** 3 m | 9.843 ft

Nominal Size 1/2 in

## **Electrical Specifications**

**3rd Order IMD Static Test Method** Two +43 dBm carriers

3rd Order IMD, typical-119 dBmDTF, Connector A-34 dBDTF, Connector B-34 dB

## VSWR/Return Loss

| Frequency Band | VSWR, typical | Return Loss, typical (dB) |
|----------------|---------------|---------------------------|
| 680-960 MHz    | 1.065         | 30.04                     |
| 1700-2200 MHz  | 1.065         | 30.04                     |
| 2200-2700 MHz  | 1.083         | 27.99                     |
| 3400-3800 MHz  | 1.222         | 20.01                     |



Page 1 of 7

## L4A-HPHMHM-3M-B

## Jumper Assembly Sample Label



## **Environmental Specifications**

**Immersion Test Method** 

Meets IEC 60529:2001, IP68 in mated condition

### Regulatory Compliance/Certifications

Agency

Classification

ISO 9001:2015

Designed, manufactured and/or distributed under this quality management system

#### Included Products

LDF4-50A

LDF4-50A, HELIAX® Low Density Foam Coaxial Cable, corrugated copper, 1/2 in, black PE jacket Halogen free jacketing non-fire-retardant (General propose cable for outdoor use only)





LDF4-50A, HELIAX® Low Density Foam Coaxial Cable, corrugated copper, 1/2 in, black PE jacket Halogen free jacketing non-fire-retardant (General propose cable for outdoor use only)

#### Product Classification

Product Type Coaxial wireless cable

Product Brand HELIAX®
Product Series LDF4-50A

Ordering Note ANDREW® standard product (Global)

General Specifications

**Product Number** 520094002/00 | SZ520094902/00

Flexibility Standard

Jacket Color Black

**Performance Note**Attenuation values typical, quaranteed within 5%

**Dimensions** 

 Diameter Over Dielectric
 12.954 mm | 0.51 in

 Diameter Over Jacket
 15.875 mm | 0.625 in

 Inner Conductor OD
 4.826 mm | 0.19 in

 Outer Conductor OD
 13.97 mm | 0.55 in

Nominal Size 1/2 in

**Electrical Specifications** 

**Cable Impedance** 50 ohm ±1 ohm

**Capacitance** 75.8 pF/m | 23.104 pF/ft

dc Resistance, Inner Conductor1.48 ohms/km | 0.451 ohms/kftdc Resistance, Outer Conductor2.69 ohms/km | 0.82 ohms/kft

dc Test Voltage 4000 V

**Inductance**  $0.19 \, \mu H/m \, \mid \, 0.058 \, \mu H/ft$ 

**Insulation Resistance** 100000 MOhms-km

Jacket Spark Test Voltage (rms) 8000 V



**Operating Frequency Band** 1 – 8800 MHz

Peak Power40 kWVelocity88 %

## VSWR/Return Loss

| Frequency Band | VSWR | Return Loss (dB) |
|----------------|------|------------------|
| 680-800 MHz    | 1.13 | 24.3             |
| 800-960 MHz    | 1.13 | 24.3             |
| 1700-2200 MHz  | 1.13 | 24.3             |
| 2300-2700 MHz  | 1.13 | 24.3             |

## Attenuation

| 1.0       0.211       0.064       36.11         1.5       0.259       0.079       29.46         2.0       0.299       0.091       25.5         10.0       0.672       0.205       11.35         20.0       0.954       0.291       7.99         30.0       1.172       0.357       6.51         50.0       1.521       0.463       502         85.0       1.995       0.608       3.82         88.0       2.031       0.619       3.76         100.0       2.169       0.661       3.52         174.0       2.887       0.88       2.64         200.0       3.103       0.946       2.46         204.0       3.135       0.956       2.43         300.0       3.835       1.169       1.99         400.0       4.462       1.36       1.71         450.0       4.749       1.447       1.61         460.0       4.804       1.464       1.59         500.0       5.021       1.53       1.52         512.0       5.085       1.55       1.5         600.0       5.033       1.686       1.38 <th>Frequency (MHz)</th> <th>Attenuation (dB/100 m)</th> <th>Attenuation (dB/100 ft)</th> <th>Average Power (kW)</th> | Frequency (MHz) | Attenuation (dB/100 m) | Attenuation (dB/100 ft) | Average Power (kW) |
|--|-----------------|------------------------|-------------------------|--------------------|
| 2.00.2990.09125.510.00.6720.20511.3520.00.9540.2917.9930.01.1720.3576.5150.01.5210.4635.0285.01.9950.6083.8288.02.0310.6193.76100.02.1690.6613.52108.02.2560.6883.38150.02.6730.8152.85174.02.8870.882.64200.03.1030.9462.46204.03.1350.9562.43300.03.8351.1691.99400.04.4621.361.71450.04.7491.4471.61460.04.8041.4641.59500.05.0211.531.52512.05.0851.551.5  | 1.0             | 0.211                  | 0.064                   | 36.11              |
| 10.00.6720.20511.3520.00.9540.2917.9930.01.1720.3576.5150.01.5210.4635.0285.01.9950.6083.8288.02.0310.6193.76100.02.1690.6613.52108.02.2560.6883.38150.02.6730.8152.85174.02.8870.882.64200.03.1030.9462.46204.03.1350.9562.43300.03.8351.1691.99400.04.4621.361.71450.04.7491.4471.61460.04.8041.4641.59500.05.0211.531.52512.05.0851.551.55  | 1.5             | 0.259                  | 0.079                   | 29.46              |
| 20.00.9540.2917.9930.01.1720.3576.5150.01.5210.4635.0285.01.9950.6083.8288.02.0310.6193.76100.02.1690.6613.52108.02.2560.6883.38150.02.6730.8152.85200.03.1030.9462.46204.03.1350.9562.43300.03.8351.1691.99400.04.4621.361.71450.04.7491.4471.61460.04.8041.4641.59500.05.0211.531.52512.05.0851.551.5  | 2.0             | 0.299                  | 0.091                   | 25.5               |
| 30.01.1720.3576.5150.01.5210.4635.0285.01.9950.6083.8288.02.0310.6193.76100.02.1690.6613.52108.02.2560.6883.38150.02.6730.8152.85174.02.8870.882.64200.03.1030.9462.46204.03.1350.9562.43300.03.8351.1691.99400.04.4621.361.71450.04.7491.4471.61460.04.8041.4641.59500.05.0211.531.52512.05.0851.551.5  | 10.0            | 0.672                  | 0.205                   | 11.35              |
| 50.01.5210.4635.0285.01.9950.6083.8288.02.0310.6193.76100.02.1690.6613.52108.02.2560.6883.38150.02.6730.8152.85174.02.8870.882.64200.03.1030.9462.46204.03.1350.9562.43300.03.8351.1691.99400.04.4621.361.71450.04.7491.4471.61460.04.8041.4641.59500.05.0211.531.52512.05.0851.551.5  | 20.0            | 0.954                  | 0.291                   | 7.99               |
| 85.01.9950.6083.8288.02.0310.6193.76100.02.1690.6613.52108.02.2560.6883.38150.02.6730.8152.85174.02.8870.882.64200.03.1030.9462.46204.03.1350.9562.43300.03.8351.1691.99400.04.4621.361.71450.04.7491.4471.61460.04.8041.4641.59500.05.0211.531.52512.05.0851.551.5  | 30.0            | 1.172                  | 0.357                   | 6.51               |
| 88.02.0310.6193.76100.02.1690.6613.52108.02.2560.6883.38150.02.6730.8152.85174.02.8870.882.64200.03.1030.9462.46204.03.1350.9562.43300.03.8351.1691.99400.04.4621.361.71450.04.7491.4471.61460.04.8041.4641.59500.05.0211.531.52512.05.0851.551.5  | 50.0            | 1.521                  | 0.463                   | 5.02               |
| 100.02.1690.6613.52108.02.2560.6883.38150.02.6730.8152.85174.02.8870.882.64200.03.1030.9462.46204.03.1350.9562.43300.03.8351.1691.99400.04.4621.361.71450.04.7491.4471.61460.04.8041.4641.59500.05.0211.531.52512.05.0851.551.5  | 85.0            | 1.995                  | 0.608                   | 3.82               |
| 108.02.2560.6883.38150.02.6730.8152.85174.02.8870.882.64200.03.1030.9462.46204.03.1350.9562.43300.03.8351.1691.99400.04.4621.361.71450.04.7491.4471.61460.04.8041.4641.59500.05.0211.531.52512.05.0851.551.5   | 88.0            | 2.031                  | 0.619                   | 3.76               |
| 150.02.6730.8152.85174.02.8870.882.64200.03.1030.9462.46204.03.1350.9562.43300.03.8351.1691.99400.04.4621.361.71450.04.7491.4471.61460.04.8041.4641.59500.05.0211.531.52512.05.0851.551.5  | 100.0           | 2.169                  | 0.661                   | 3.52               |
| 174.02.8870.882.64200.03.1030.9462.46204.03.1350.9562.43300.03.8351.1691.99400.04.4621.361.71450.04.7491.4471.61460.04.8041.4641.59500.05.0211.531.52512.05.0851.551.5   | 108.0           | 2.256                  | 0.688                   | 3.38               |
| 200.03.1030.9462.46204.03.1350.9562.43300.03.8351.1691.99400.04.4621.361.71450.04.7491.4471.61460.04.8041.4641.59500.05.0211.531.52512.05.0851.551.5   | 150.0           | 2.673                  | 0.815                   | 2.85               |
| 204.03.1350.9562.43300.03.8351.1691.99400.04.4621.361.71450.04.7491.4471.61460.04.8041.4641.59500.05.0211.531.52512.05.0851.551.5  | 174.0           | 2.887                  | 0.88                    | 2.64               |
| 300.03.8351.1691.99400.04.4621.361.71450.04.7491.4471.61460.04.8041.4641.59500.05.0211.531.52512.05.0851.551.5   | 200.0           | 3.103                  | 0.946                   | 2.46               |
| 400.04.4621.361.71450.04.7491.4471.61460.04.8041.4641.59500.05.0211.531.52512.05.0851.551.5  | 204.0           | 3.135                  | 0.956                   | 2.43               |
| 450.04.7491.4471.61460.04.8041.4641.59500.05.0211.531.52512.05.0851.551.5  | 300.0           | 3.835                  | 1.169                   | 1.99               |
| 460.04.8041.4641.59500.05.0211.531.52512.05.0851.551.5   | 400.0           | 4.462                  | 1.36                    | 1.71               |
| 500.05.0211.531.52512.05.0851.551.5  | 450.0           | 4.749                  | 1.447                   | 1.61               |
| <b>512.0</b> 5.085 1.55 1.5  | 460.0           | 4.804                  | 1.464                   | 1.59               |
|  | 500.0           | 5.021                  | 1.53                    | 1.52               |
| <b>600.0</b> 5.533 1.686 1.38  | 512.0           | 5.085                  | 1.55                    | 1.5                |
|  | 600.0           | 5.533                  | 1.686                   | 1.38               |



| 700.0  | 6.009  | 1.831 | 1.27 |
|--------|--------|-------|------|
| 800.0  | 6.456  | 1.968 | 1.18 |
| 824.0  | 6.56   | 1.999 | 1.16 |
| 894.0  | 6.855  | 2.089 | 1.11 |
| 960.0  | 7.124  | 2.171 | 1.07 |
| 1000.0 | 7.284  | 2.22  | 1.05 |
| 1218.0 | 8.11   | 2.472 | 0.94 |
| 1250.0 | 8.226  | 2.507 | 0.93 |
| 1500.0 | 9.093  | 2.771 | 0.84 |
| 1700.0 | 9.744  | 2.97  | 0.78 |
| 1794.0 | 10.039 | 3.06  | 0.76 |
| 1800.0 | 10.058 | 3.066 | 0.76 |
| 2000.0 | 10.666 | 3.251 | 0.72 |
| 2100.0 | 10.961 | 3.341 | 0.7  |
| 2200.0 | 11.251 | 3.429 | 0.68 |
| 2300.0 | 11.535 | 3.516 | 0.66 |
| 2500.0 | 12.09  | 3.685 | 0.63 |
| 2700.0 | 12.627 | 3.849 | 0.6  |
| 3000.0 | 13.407 | 4.086 | 0.57 |
| 3400.0 | 14.401 | 4.389 | 0.53 |
| 3600.0 | 14.882 | 4.536 | 0.51 |
| 3700.0 | 15.118 | 4.608 | 0.5  |
| 3800.0 | 15.353 | 4.679 | 0.5  |
| 3900.0 | 15.585 | 4.75  | 0.49 |
| 4000.0 | 15.815 | 4.82  | 0.48 |
| 4100.0 | 16.042 | 4.889 | 0.48 |
| 4200.0 | 16.268 | 4.958 | 0.47 |
| 4300.0 | 16.492 | 5.027 | 0.46 |
| 4400.0 | 16.714 | 5.094 | 0.46 |
| 4500.0 | 16.934 | 5.161 | 0.45 |
| 4600.0 | 17.153 | 5.228 | 0.44 |
| 4700.0 | 17.37  | 5.294 | 0.44 |
| 4800.0 | 17.585 | 5.36  | 0.43 |
| 4900.0 | 17.798 | 5.425 | 0.43 |
| 5000.0 | 18.01  | 5.489 | 0.42 |
| 3000.0 | 10.01  | 0.409 | 0.42 |

| 6000.0 | 20.055 | 6.113 | 0.38 |
|--------|--------|-------|------|
| 8000.0 | 23.826 | 7.262 | 0.32 |
| 8800.0 | 25.244 | 7.694 | 0.3  |

### Material Specifications

 Dielectric Material
 Foam PE

 Jacket Material
 PE

Inner Conductor Material Copper-clad aluminum wire

Outer Conductor Material Corrugated copper

### Mechanical Specifications

Minimum Bend Radius, multiple Bends127 mm | 5 inMinimum Bend Radius, single Bend50.8 mm | 2 in

Number of Bends, minimum15Number of Bends, typical50

 Tensile Strength
 113 kg | 249.122 lb

 Bending Moment
 3.8 N-m | 33.633 in lb

 Flat Plate Crush Strength
 2 kg/mm | 111.995 lb/in

## **Environmental Specifications**

Installation temperature $-40 \,^{\circ}\text{C to} + 60 \,^{\circ}\text{C (}-40 \,^{\circ}\text{F to} + 140 \,^{\circ}\text{F)}$ Operating Temperature $-55 \,^{\circ}\text{C to} + 85 \,^{\circ}\text{C (}-67 \,^{\circ}\text{F to} + 185 \,^{\circ}\text{F)}$ Storage Temperature $-70 \,^{\circ}\text{C to} + 85 \,^{\circ}\text{C (}-94 \,^{\circ}\text{F to} + 185 \,^{\circ}\text{F)}$ 

Attenuation, Ambient Temperature $68 \, ^{\circ}\text{F} \mid 20 \, ^{\circ}\text{C}$ Average Power, Ambient Temperature $104 \, ^{\circ}\text{F} \mid 40 \, ^{\circ}\text{C}$ Average Power, Inner Conductor Temperature $212 \, ^{\circ}\text{F} \mid 100 \, ^{\circ}\text{C}$ 

Packaging and Weights

**Cable weight** 0.22 kg/m | 0.148 lb/ft

## Regulatory Compliance/Certifications

Agency Classification

CENELEC EN 50575 compliant, Declaration of Performance (DoP) available

CHINA-ROHS Below maximum concentration value

ISO 9001:2015 Designed, manufactured and/or distributed under this quality management system

ANDREW® an Amphenol company

REACH-SVHC Compliant as per SVHC revision on www.andrew.com/ProductCompliance

ROHS Compliant UK-ROHS Compliant



